

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA26 | Washwood Heath to Curzon Street
Operational assessment (SV-004-026)
Sound, noise and vibration

November 2013

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Department
for Transport

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Appendix SV-004-026

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Operation assessment	004
Community forum area:	Washwood Heath to Curzon Street	026

Contents

1	Introduction	3
1.1	Structure of the sound, noise and vibration appendices	3
1.2	Evaluation of impacts and effects	4
2	Scope, assumptions and limitations	5
2.1	Regional and local policy guidance	5
2.2	Engagement	5
2.3	Methodology	5
2.4	Assumptions	6
2.5	Local limitations	7
3	Environmental baseline	8
4	Effects arising during operation	9
4.1	Introduction	9
4.2	Avoidance and mitigation measures	9
4.3	Quantitative identification of impacts and effects	9
4.4	Assessment of impacts and effects	56

List of tables

Table 1: Ground-borne sound and vibration levels, noise and vibration impacts and effects.....	11
Table 2: Summary of operational ground-borne noise and vibration impacts.....	17
Table 3: Operational airborne sound level, noise impacts and effects	19
Table 4: Summary of operational airborne sound impacts.....	56

1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these details the methodology used (Appendix SV-001-000) and relates to the sound, noise and vibration assessment for all community forum areas (CFA).
- 1.1.2 For the Washwood Heath to Curzon Street community forum area (CFA02), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-026);
 - construction sound, noise and vibration (Appendix SV-003-026); and
 - operational sound, noise and vibration (Appendix SV-004-026) (this appendix).
- 1.1.3 The outcomes of this assessment are summarised in Volume 2: CFA26 Report, Chapter 11 Sound, Noise and Vibration.
- 1.1.4 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5 sound, noise and vibration map book.
- 1.1.5 This appendix presents the likely noise and vibration impacts, effects and significant effects arising from the operation of the Proposed Scheme for the Washwood Heath to Curzon Street area on:
- people, primarily where they live ('residential receptors') in terms a) individual dwellings and b) on a wider community basis, including any shared community spaces; and
 - community facilities such as schools, hospitals, places of worship, and also commercial properties such as offices and hotels, collectively described as 'non-residential receptors' and 'quiet areas'.
- 1.1.6 The assessment of likely impacts, effects and significant effects from operational noise and vibration on agricultural, community, ecological or heritage receptors and the assessment of tranquillity are presented in the following documents within Volume 5:
- Agriculture, forestry and soils Appendix AG-001-026
 - Community Appendix CM-001-026
 - Ecology Appendix EC-005-004
 - Heritage Appendix CH-003-026
 - Landscape and Visual Appendix LV-001-026

1.2 Evaluation of impacts and effects

- 1.2.1 This appendix provides a quantitative assessment of operational noise and vibration impacts and effects and a qualitative assessment of likely significant effects, based on the impacts and effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.
- 1.2.2 Indirect effects arising from permanent changes in traffic patterns on the existing road and rail networks as a consequence of the Proposed Scheme are also reported in this appendix, where they would occur within the study area as defined in Volume 5 Appendix SV-001-000.
- 1.2.3 Route-wide impacts, effects and significant effects associated with noise or vibration from the operation of the Proposed Scheme are reported in Volume 3.
- 1.2.4 Off-route effects of noise or vibration arising from the operation of the Proposed Scheme, including those likely to arise from permanent changes in traffic patterns on roads or railways outside of the study area for direct effects are reported in Volume 4.
- 1.2.5 In undertaking the assessment of sound, noise and vibration, consistent with EIA Regulations and emerging National Planning Practice Guidance¹ a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV001-000.
- 1.2.6 The assessment of impacts has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The Assessment Locations employed in this assessment are presented on map series Sv-02 in the CFA26 Volume 5 sound, noise and vibration map book.

¹ National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk> ; refer to the table summarising noise exposure hierarchy

2 Scope, assumptions and limitations

2.1 Regional and local policy guidance

2.1.1 The policy framework for sound, noise and vibration is set out in Volume 1 and in Appendix SV-001-000. As part of the engagement with local authorities through the Planning Forum Sub Group - Acoustics, information regarding any specific local planning guidance in respect of noise and vibration has been requested. Whilst no information has been received for this study area via the Planning Forum Sub Group - Acoustics, the following local policy guidance on noise and vibration has been identified:

- The Birmingham Plan - Birmingham Unitary Development Plan – 2005.

2.1.2 This guidance has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5: particularly Appendix SV-001-000.

2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners via the Planning Forum Sub Group - Acoustics, is set out in Volume 1, Section 8.

2.2.2 Engagement with communities has been via the Community Forums, as set out in Volume 1. In respect of sound, noise and vibration the following discussions have taken place:

- general discussions in respect of local issues, including possible ways to avoid and mitigate the potential impacts of noise or vibration
- September / October 2012; a specific presentation about sound, noise and vibration with discussion afterwards with one of the project team specialists;
- November / December 2012; specific request for the Community Forum to propose baseline sound monitoring locations;
- January / February 2013; feedback to the Community Forum on any proposed baseline monitoring locations; and
- verbal / written response to questions on sound, noise and vibration.

2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the Scope and Methodology Report (SMR) (Volume 5: Appendix CT-001-000/1), is clarified in a number of areas by the SMR addendum (Volume 5: Appendix CT-001-000/2). Further information is contained in Volume 5: Appendix SV-001-000.

2.4 Assumptions

- 2.4.1 Route-wide assumptions are outlined in Volume 1, Section 8 and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment of operational sound noise and vibration within this CFA are set out in Volume 2: Report 26 and below.

Washwood Heath Rolling Stock Maintenance Depot

- 2.4.2 The Washwood Heath Rolling Stock Maintenance Depot (RSMD) is a facility for the maintenance of the HS2 fleet of trains. The proposed location in Washwood Heath includes facilities for the inspection and maintenance of the trains, stabling of the trains when not in passenger service and the signalling control centre. The maintenance depot is shown on map series SV-02 in the CFA10 Volume 5 sound, noise and vibration map book.
- 2.4.3 The Washwood Heath facility includes provision for a maintenance building, a wheel lathe building, a carriage wash building and outdoor stabling facilities for up to 40 trains. It is expected that the fleet maintenance and stabling will be such that during the operation of Phase 2 of HS2, there are likely to be 34 train sets stabled at Washwood Heath overnight. Some of these trains will be required to be inspected or maintained during this night-time stabling period and as such there will be a number of movements of trains around the depot during the night.
- 2.4.4 The normal scheme of operations for modern railway depots is that a train leaves service, is taken through the carriage wash and cleaned. After passing through the wash, it is then moved to the stabling sidings area. Once stabled, the on-board equipment is powered down to reduce energy consumption. This means that the majority of the stabled trains will produce very low sound levels once they have been stabled.
- 2.4.5 If trains are required to be inspected or maintained, they will be moved under their own power from the stabling area and into the maintenance building. The maintenance activities undertaken in such maintenance buildings are generally inspection and interchange of parts. If a component of a train is found to be defective and requires maintenance, this is done by changing the component for a replacement, a procedure that usually requires hand tools. Once the inspection and maintenance has been completed, the train is moved under its own power from the maintenance building back into the stabling sidings.
- 2.4.6 Heavier maintenance of the rolling stock will be carried out within the depot buildings, but this is usually a procedure that will require more time than is available during engineering hours. As such, this has the potential to be carried out during both daytime and night-time and may take several days of work to complete. The use of the wheel lathe is likely to be a heavy maintenance activity and as such is most likely to be in use during the day.
- 2.4.7 There will also be infrequent deliveries and collections of materials by road during the daytime.

2.5 Local limitations

- 2.5.1 In this area, there are a number of locations where the land or property owners did not permit baseline sound level monitoring to be undertaken at their premises. However, sufficient information has been obtained to undertake the assessment. Further information is provided in Volume 5: Appendix SV-002-026.

3 Environmental baseline

3.1 Existing baseline

3.1.1 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors. The existing and future baseline airborne sound levels derived from these measurements are included within Table 3. Details of the baseline data collection and the methodology are given in Volume 5: Appendix SV-001-000 and specifically for this study area in Volume 5: Appendix SV-002-026.

3.1.2 The majority of receptors adjacent to the line of the route are not currently subject to appreciable vibration and therefore vibration at all receptors has been assessed using the absolute vibration criteria as described in Volume 5: Appendix SV-001-000.

3.2 Future baseline

3.2.1 The assessment is based upon the predicted change in sound levels that result from the Proposed Scheme. The assessment initially considered a reasonable worst case (that would overestimate the change in levels) by assuming that sound levels would not change from the existing baseline year of 2012/2013. Where significant effects were identified on this basis, the effects have been assessed using the baseline year of 2026 to coincide with the proposed start of passenger services. The future baseline is for the sound environment that would exist in 2026 without the Proposed Scheme.

4 Effects arising during operation

4.1 Introduction

4.1.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts and effects are presented. This is followed by the identification of significant effects and the evidence used to support these conclusions.

4.1.2 The structure of this assessment report is:

- Avoidance and mitigation measures
- Quantitative identification of impact and effects
 - Ground-borne sound and vibration
 - Residential
 - Non-residential
 - Airborne sound
 - Residential
 - Non-residential
- Assessment of impacts and effects
 - Residential receptors: direct effects – dwellings
 - Residential receptors: direct effects – communities
 - Residential receptors: indirect effects
 - Non-residential receptors: direct effects
 - Non-residential receptors: indirect effects
 - Cumulative effects from the proposed scheme and other committed development.

4.2 Avoidance and mitigation measures

4.2.1 These are set out in Volume 2: Report 26.

4.3 Quantitative identification of impacts and effects

Ground-borne sound and vibration

4.3.1 Assessment locations defined for the quantitative assessment of impacts are shown on map series SV-02 in the CFA26 Volume 5 sound, noise and vibration map book.

4.3.2 For each Assessment Location, the assessment results for residential and non-residential receptors are presented in Table 1. Explanation of the information in Table 1 is provided in Appendix SV-001-000, with the following additional notes.






B	Type of effect - For significant effects further detail about the type of effect is set out in the text of Appendix SV-001-000.
NA	Type of effect - Generally no adverse effect
A	Type of effect - Adverse effect
S	Type of effect - Significant adverse effect
VDV	Vibration Dose Value
~	The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000).
^	The impact methodology has identified a potential significant effect at this receptor which based upon further qualitative information is not considered to be a likely significant effect. Please refer the end of this Appendix for further information.
	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced residential community area, or individual receptor.
	Yellow denotes a low ground-borne noise impact or a minor ground-borne vibration impact
	Orange denotes a medium ground-borne noise impact or a moderate ground-borne vibration impact
	Red denotes a high ground-borne noise impact or a major ground-borne vibration impact
	Dark red denotes a very high ground-borne noise impact

Table 1: Ground-borne sound and vibration levels, noise and vibration impacts and effects

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
ID	Area represented													
36091	Duddeston Mill Road, Vauxhall	-	0.00	0.00	-	1	NA	R	T	-	-	-	-	-
41354	New Bartholomew Street, Birmingham	-	0.00	0.00	-	12	NA	R	T	-	-	-	-	-
41588	Andover Street, Birmingham	-	0.00	0.00	-	1	NA	R	T	-	-	-	-	-
45327	Curzon Street, Birmingham	-	0.00	0.00	-	1	NA	R	T	-	-	-	-	-
50326	Dollman Street, Birmingham	-	0.00	0.00	-	2	NA	R	T	-	-	-	-	-
51814	Northumberland Street, Birmingham	-	0.00	0.00	-	51	NA	R	T	-	-	-	-	-
51904	Inkerman Street, Birmingham	-	0.00	0.00	-	2	NA	R	T	-	-	-	-	-
621687	Bromford Lane, Washwood Heath	23	0.03	0.02	-	2	NA	R	T	-	-	-	-	-
621689	Bromford Lane, Washwood Heath	9	0.02	0.01	-	1	NA	R	T	-	-	-	-	-
622083	Bromford Lane, Washwood Heath	6	0.02	0.01	-	1	NA	R	T	-	-	-	-	-
35848	Network Park Industrial Estate, Duddeston Mill Road, Saltley, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
35848	Network Park Industrial Estate, Duddeston Mill Road, Saltley, (General Commercial)	-	0.00	0.00	-	2	B	G4/V3	T	-	-	-	-	-
35948	Salts Healthcare Ltd, Network Park Industrial Estate, Duddeston Mill Road, Saltley, (Health Centre)	-	0.00	0.00	-	2	B	G4/V3	T	-	-	-	-	-
35948	Network Park Industrial Estate, Duddeston Mill Road, Saltley, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
ID	Area represented													
35948	Network Park Industrial Estate, Duddeston Mill Road, Saltley, (Shopping)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
35948	Network Park Industrial Estate, Duddeston Mill Road, Saltley, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
35948	Network Park Industrial Estate, Duddeston Mill Road, Saltley, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
37938	Safeside, Vauxhall Road, Birmingham, (Fire Station)	-	0.00	0.00	-	1	B	G4/V2	T	-	-	-	-	-
37938	Headquarters, Vauxhall Road, Birmingham, (Fire Station)	-	0.00	0.00	-	1	B	G4/V2	T	-	-	-	-	-
37938	St. James House, St. James Place, Birmingham, (Training)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
37938	Lawley Middleway, Birmingham, (Shopping)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41354	Benacre Drive, Fazeley Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41354	Benacre Drive, Fazeley Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41354	Benacre Drive, Fazeley Street, Birmingham, (Car Dealer)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41354	Bordesley Street, Birmingham, (General Commercial)	-	0.00	0.00	-	2	B	G4/V3	T	-	-	-	-	-
41354	New Bartholomew Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
ID	Area represented													
41354	New Bartholomew Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41354	Bordesley Street, Birmingham, (Office)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41354	New Bartholomew Street, Birmingham, (Dogs Home)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41588	Andover Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41588	Andover Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41588	Andover Street, Birmingham, (Shopping)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41588	Fazeley Street, Birmingham, (Printing Works)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41588	Fazeley Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
41588	Andover Street, Birmingham, (General Commercial)	-	0.00	0.00	-	3	B	G4/V3	T	-	-	-	-	-
45327	Curzon Street, Birmingham, (Performing Arts Studies)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Dollman Street, Birmingham, (Local Government Office)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Jubilee House, Alma Crescent, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Nechells Business Centre, Dollman Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
ID	Area represented													
50326	Nechells Business Centre, Dollman Street, Birmingham, (Shopping)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Nechells Business Centre, Dollman Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Rea Industrial Estate, Inkerman Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Rea Industrial Estate, Inkerman Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
50326	Rea Industrial Estate, Inkerman Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
51904	Erskine Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
51904	Inkerman Street, Birmingham, (General Commercial)	-	0.00	0.00	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (Factory)	-	0.01	0.01	-	1	B	G4/V4	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (Office)	-	0.01	0.01	-	3	B	G4/V3	T	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
ID	Area represented													
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (Shopping)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (Shopping)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (Car Hire)	-	0.01	0.01	-	3	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (Factory)	-	0.01	0.01	-	1	B	G4/V4	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	-	0.01	0.01	-	1	B	G4/V3	T	-	-	-	-	-
66559	Star Park South, Heartlands Parkway, Birmingham, (General Commercial)	-	0.03	0.02	-	1	B	G4/V3	T	-	-	-	-	-
621687	Bromford Lane, Washwood Heath, (Car Dealer)	23	0.03	0.02	-	1	B	G4/V3	T	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
ID	Area represented													
621690	Arden Industrial Estate, Bromford Lane, Washwood Heath, (General Commercial)	23	0.04	0.02	-	1	B	G4/V3	T	-	-	-	-	-
622083	Festival Works, Bromford Lane, Washwood Heath, (General Commercial)	6	0.02	0.01	-	1	B	G4/V3	T	-	-	-	-	-
622086	Arden Industrial Estate, Bromford Lane, Washwood Heath, (Hire Shop)	9	0.02	0.01	-	1	B	G4/V3	T	-	-	-	-	-
622087	Arden Industrial Estate, Bromford Lane, Washwood Heath, (General Commercial)	15	0.02	0.01	-	2	B	G4/V3	T	-	-	-	-	-
622091	Arden Industrial Estate, Bromford Lane, Washwood Heath, (General Commercial)	16	0.02	0.01	-	1	B	G4/V3	T	-	-	-	-	-
622092	Arden Industrial Estate, Bromford Lane, Washwood Heath, (General Commercial)	12	0.02	0.01	-	2	B	G4/V3	T	-	-	-	-	-
711044	Saltley Business Park, Dorset Road, Saltley, (General Commercial)	-	0.02	0.01	-	1	B	G4/V3	T	-	-	-	-	-
711044	Saltley Business Park, Cumbria Way, Saltley, (General Commercial)	-	0.02	0.01	-	1	B	G4/V3	T	-	-	-	-	-
711044	Saltley Business Park, Dorset Road, Saltley, (General Commercial)	-	0.02	0.01	-	1	B	G4/V3	T	-	-	-	-	-

Direct Impact summary





- 4.3.3 The operational ground-borne noise and vibration impacts identified in Table 1 are summarised in Table 2.

Table 2: Summary of operational ground-borne noise and vibration impacts

	Number of ground-borne noise impacts			
	Low	Medium	High	Very High
Residential properties	0	0	0	0
Non-residential properties	0		0	
	Number of ground-borne vibration impacts			
	Minor	Moderate	Major	Risk of building damage
Residential properties	0	0	0	0

Airborne sound: direct impacts and effects

- 4.3.4 The direct effects from the operation of the Proposed Scheme as well as any new, amended or altered roads or railway lines, which are identified as part of the scheme, are presented in Table 3.
- 4.3.5 The assessment information, impact criteria and significance criteria for the assessment of the incorporated mitigation case at residential and non-residential receptors are presented in Table 3. The results should be considered in conjunction with the information contained in map series Sv-02 in the CFA26 Volume 5 sound, noise and vibration map book.
- 4.3.6 Explanation of the Table 3 information is provided in Volume 5: Appendix SV001-000, with the following additional notes.

	Where the significant effect column is marked, then a significant effect is identified at the referenced group of dwellings, or individual residential or non-residential receptor.
	Yellow denotes a minor impact at a residential building – a change is of 3-5 dB
	Orange denotes a moderate impact at a residential building – a change is of 5-10 dB
	Red denotes a major impact at a residential building – a change is of >10 dB
*	Day - $L_{pAeq,07:00-23:00}$
**	Night - $L_{pAeq,23:00-07:00}$
***	Max - L_{pAFMax} In the Proposed Scheme only column, two values are presented. The first is the value for the HS2 mitigated train and the second is the value for the TSI compliant train. For further information refer to Volume 5: Appendix SV-001-000.
****	Where the Proposed Scheme modifies an existing source, i.e. road or railway realignments, the <i>Proposed Scheme only</i> level in the table includes the sound from the modified source. In this situation the <i>Do something (Opening year baseline + Year 15 traffic)</i> level has been corrected so as to not double count the sound associated with the road or railway on its new and existing alignment.
A	Adverse effect
B	For significant effects further detail about the type of effect is set out in the text of Appendix SV-

001-000.

CD	Committed Development. The value in brackets in the number of impacts represented column is the value with the committed development.
G	(G1)Theatres, large auditoria and concert halls, (G2) Sound recording and broadcast studios, (G3) Places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) Schools, colleges, hospitals, hotels and libraries, and (G5) Offices and general commercial premises
H	High existing ambient sound level. Defined as $>65\text{dB}_{\text{L}_{\text{Aeq, day}}}$ and/or $>55\text{dB}_{\text{L}_{\text{Aeq, night}}}$
L	Low existing ambient sound level. Defined as $<42\text{dB}_{\text{L}_{\text{Aeq, day}}}$ and/or $<32\text{dB}_{\text{L}_{\text{Aeq, night}}}$
LD	Landscape receptor
NA	Generally no adverse effect
NI	The receptor is predicted to qualify for mitigation, which shall be provided to the specification defined in the Noise Insulation (Railways and other Guided Rail Systems) Regulations 1996
R	Residential
RM	Residential mooring
S	Significant adverse effect
U	Unacceptable adverse effect
#	A change of 3dB or greater has been identified however, the assessment methodology only defines an impact where the absolute sound level from the Proposed Scheme is greater or equal to 50 dB $\text{L}_{\text{pAeq, 23:00} - 07:00}$ during the daytime or 40 dB $\text{L}_{\text{pAeq, 07:00} - 23:00}$ at night. At the receptor denoted the absolute level condition is not met and therefore no impact is identified.
~	The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000)..
\$	A change of 3dB or greater has been identified however, the impact methodology for non-residential receptors includes a screening criteria for G3 building use of 50 dB $\text{L}_{\text{pAeq, 07:00-23:00}}$, for G4 building use 55 dB $\text{L}_{\text{pAeq, 07:00-23:00}}$ and 45 dB $\text{L}_{\text{pAeq, 23:00-07:00}}$, for G5 building use 55 dB $\text{L}_{\text{pAeq, 07:00-23:00}}$. At the receptor denoted the screening criteria is not met and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-000.
^	The impact methodology has either identified an impact at a receptor which based upon further qualitative information does not gives rise to a significant effect. Further information is provided at the end of this Appendix.

Table 3: Operational airborne sound level, noise impacts and effects

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
36091	Duddeston Mill Road, Vauxhall	54	49	73/75	74	69	66	74	69	0	0	A	1	R	T	H	-	-	-	
36117	Arden Road, Saltley	39	33	55/55	52	45	58	52	45	0	0	NA	1	R	T	-	-	-	-	
36358	Mill Burn Way, Birmingham	40	34	55/55	57	49	58	57	49	0	0	NA	143	R	T	-	-	-	-	
36618	Moor Street Queensway, Birmingham	30	25	57/57	69	65	76	69	65	0	0	NA	59	R	T	H	-	-	-	
36787	Trevor Street, Birmingham	53	47	73/73	65	57	70	65	57	0	0	A	1	R	T	H	-	-	-	
37341	Clarell Avenue, Nechells	48	42	64/68	67	65	58	67	65	0	0	A	1	R	T	H	-	-	-	
37463	Crawford Street, Birmingham	58	51	73/73	65	57	66	65	57	0	0	A	3	R	T	H	-	-	-	
37790	Nechells Place, Birmingham	52	45	67/67	62	55	57	62	55	0	0	A	3	R	T	H	-	-	-	
38276	Temple Row, Birmingham	29	23	44/45	55	48	76	55	48	0	0	NA	57	R	T	-	-	-	-	
38592	Landor Street, Birmingham	45	39	63/65	62	59	60	62	59	0	0	NA	1	R	T	H	-	-	-	
40462	Allison Street, Birmingham	36	30	53/53	60	57	74	60	57	0	0	NA	5	R	T	H	-	-	-	
40642	Park Street, Nechells	51	44	61/61	63	58	74	63	58	0	0	A	1	R	T	H	-	-	-	
40791	Oxford Street, Birmingham	37	30	53/53	60	54	74	60	54	0	0	NA	14	R	T	-	-	-	-	
40917	Allison Street, Birmingham	39	33	56/56	57	52	64	57	52	0	0	NA	4	R	T	-	-	-	-	
41264	Fazeley Street, Birmingham	47	41	64/67	72	63	64	72	63	0	0	A	4	R	T	H	-	-	-	
41354	New Bartholomew Street, Birmingham	48	44	62/63	57	52	64	57	53	0	1	A	12	R	T	-	-	-	-	
41588	Andover Street, Birmingham	46	40	65/65	74	68	77	74	68	0	0	A	1	R	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
42018	Digbeth, Birmingham	28	22	54/55	69	65	76	69	65	0	0	NA	106	R	T	H	-	-	-	
42114	Rotunda And New Street, Birmingham	21	15	59/60	59	52	76	59	52	0	0	NA	326	R	T	-	-	-	-	
42269	Carrs Lane, Birmingham	19	12	48/53	63	58	74	63	58	0	0	NA	36	R	T	H	-	-	-	
42326	Dale End, Birmingham	35	28	43/43	68	60	74	68	60	0	0	NA	34	R	T	H	-	-	-	
42359	High Street, Birmingham	25	20	56/57	67	59	74	67	59	0	0	NA	122	R	T	H	-	-	-	
44620	Jennens Road, Birmingham	50	43	61/61	61	53	71	61	53	0	0	A	2	R	T	-	-	-	-	
45208	Jennens Road, Birmingham	30	25	54/54	66	58	75	66	58	0	0	NA	240	R	T	H	-	-	-	
45327	The Woodsman Public House, Curzon Street, Birmingham	57	50	71/73	61	59	74	60	59	-2	0	A	1	R	T	H	-	-	-	
46410	The Priory Queensway, Birmingham	34	28	60/60	64	56	74	64	56	0	0	NA	52	R	T	H	-	-	-	
48460	Fazeley Street, Nechells	39	33	56/56	68	60	74	68	60	0	0	NA	8	R	T	H	-	-	-	
48773	Barn Street, Nechells	52	46	67/70	66	60	64	66	60	0	0	A	1	R	T	H	-	-	-	
48796	Great Barr Street, Birmingham	44	38	61/62	58	51	64	58	51	0	0	NA	4	R	T	-	-	-	-	
48817	Watery Lane Middleway, Bordesley, Birmingham	72	63	58/59	73	65	60	73	65	0	0	A	2	R	T	H	-	-	-	
49490	Dollman Street, Birmingham	47	42	62/65	69	61	58	69	61	0	0	A	1	R	T	H	-	-	-	
49547	Vauxhall Road, Birmingham	46	41	59/64	65	61	77	65	61	0	0	A	60	R	T	H	-	-	-	
49589	Hindlow Close, Birmingham	46	40	61/62	58	54	75	59	54	0	0	A	23	R	T	-	-	-	-	
49725	Ashted Walk, Birmingham	44	38	59/61	50	48	58	50	48	1	0	NA	31	R	T	-	-	-	-	
49870	Great Francis Street,	40	35	55/58	59	54	75	59	54	0	0	NA	1	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham																			
49958	Great Francis Street, Birmingham	43	37	58/60	59	54	75	59	54	0	0	NA	1	R	T	-	-	-	-	
50110	Dollman Street, Birmingham	47	41	66/69	58	52	75	58	52	0	0	A	3	R	T	-	-	-	-	
50238	Devon Street, Birmingham	47	41	63/65	67	60	58	67	60	0	0	A	11	R	T	H	-	-	-	
50284	Alma Crescent, Birmingham	49	43	64/67	58	52	58	58	53	0	1	A	2	R	T	-	-	-	-	
50326	Dollman Street, Birmingham	51	46	68/71	59	56	58	60	56	1	0	A	2	R	T	H	-	-	-	
50586	Forster Street, Birmingham	56	54	60/64	55	53	66	56	54	1	1	A	4	R	T	-	-	-	-	
50821	Barrack Street, Birmingham	46	40	57/62	57	51	60	57	51	0	0	A	65	R	T	-	-	-	-	
50998	Duddeston Manor Road, Birmingham	45	39	57/62	56	51	62	56	51	0	0	NA	183	R	T	-	-	-	-	
51047	Duddeston Manor Road, Birmingham	40	34	54/55	58	52	67	58	52	0	0	NA	200	R	T	-	-	-	-	
51535	Garrison Street, Birmingham	42	36	57/57	58	52	60	58	52	0	0	NA	4	R	T	-	-	-	-	
51605	Garrison Street, Birmingham	58	52	60/61	58	52	60	58	52	0	0	A	2	R	T	-	-	-	-	
51730	Landor Street, Nechells	45	40	62/64	55	51	60	55	51	0	0	A	1	R	T	-	-	-	-	
51814	Northumberland Street, Birmingham	54	49	72/73	56	51	61	58	53	2	2	A	51	R	T	-	-	-	-	
51904	Inkerman Street, Birmingham	45	40	68/70	58	54	75	59	54	0	0	A	2	R	T	-	-	-	-	
52180	Lawley Middleway, Birmingham	63	53	68/71	62	51	60	63	53	1	2	A	18	R	T	-	-	-	-	
52201	Windsor Street South,	56	49	63/65	57	51	60	57	51	0	0	A	40	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham																			
52220	Vauxhall Road, Birmingham	62	52	65/69	62	51	60	63	52	1	1	A	32	R	T	-	-	-	-	
52342	Barrack Street, Birmingham	48	42	59/60	57	51	60	57	51	0	0	A	38	R	T	-	-	-	-	
52360	Vauxhall Road, Birmingham	48	42	61/63	65	61	77	65	61	0	0	A	12	R	T	H	-	-	-	
52398	Penn Street, Birmingham	55	50	65/69	53	49	60	55	50	2	1	A	1	R	T	-	-	-	-	
53526	Bloomsbury Walk, Birmingham	40	34	59/59	69	61	70	69	61	0	0	NA	88	R	T	H	-	-	-	
53805	Melvina Road, Birmingham	42	37	59/60	72	64	70	72	64	0	0	NA	66	R	T	H	-	-	-	
53993	Melvina Road, Birmingham	42	36	58/58	74	65	70	74	65	0	0	NA	138	R	T	H	-	-	-	
54833	St. Saviours Road, Birmingham	44	39	62/63	56	50	66	56	50	0	0	NA	72	R	T	-	-	-	-	
54867	George Arthur Road, Birmingham	43	37	60/61	54	48	59	54	48	0	0	NA	116	R	T	-	-	-	-	
55784	Reginald Road, Birmingham	40	34	58/58	58	46	64	58	46	0	0	NA	137	R	T	-	-	-	-	
56716	City View, Birmingham	43	37	59/60	49	42	56	50	43	1	1	NA	64	R	T	-	-	-	-	
56870	Ashley Gardens, Birmingham	44	38	60/61	49	42	56	50	43	1	1	NA	43	R	T	-	-	-	-	
57289	Adderley Road, Birmingham	45	40	62/64	71	66	79	71	66	0	0	A	49	R	T	H	-	-	-	
57342	Adderley Road, Birmingham	40	35	58/58	64	50	58	64	50	0	0	NA	46	R	T	-	-	-	-	
57363	Lock Keepers Cottage, Crawford Street, Birmingham	48	42	64/65	58	55	66	58	55	0	0	A	4	R	T	H	-	-	-	
57381	Adderley Road, Birmingham	47	41	64/66	58	55	66	58	55	0	0	A	2	R	T	H	-	-	-	
58294	Wolseley Street, Bordesley, Birmingham	40	34	55/55	57	49	58	57	49	0	0	NA	35	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
58528	Chartist Road, Birmingham	47	40	63/65	68	57	74	68	57	0	0	A	104	R	T	H	-	-	-	
58626	Bennetts Road, Birmingham	46	40	63/64	64	50	59	64	51	0	0	A	68	R	T	-	-	-	-	
58835	Sandway Gardens, Birmingham	46	40	61/62	51	45	57	52	46	1	1	A	42	R	T	-	-	-	-	
59103	Bennetts Road, Birmingham	46	40	61/62	64	50	59	64	51	0	0	A	35	R	T	-	-	-	-	
59191	Arley Road, Birmingham	47	42	68/69	53	47	56	54	48	1	1	A	92	R	T	-	-	-	-	
59457	Johnson Street, Birmingham	41	35	60/61	52	51	59	52	51	0	0	NA	147	R	T	-	-	-	-	
59609	Mount Street, Nechells, Birmingham	46	40	63/64	52	50	58	52	50	1	0	A	34	R	T	-	-	-	-	
59937	St Clements Road, Nechells	43	37	62/63	53	50	58	53	50	0	0	NA	2	R	T	-	-	-	-	
60182	Trevor Street, Nechells	54	47	70/71	65	57	70	65	57	0	0	A	1	R	T	H	-	-	-	
61166	Washwood Heath Road, Birmingham	58	51	65/65	70	61	75	70	61	0	0	A	47	R	T	H	-	-	-	
61503	Adderley Gardens, Birmingham	46	41	67/67	71	62	80	71	62	0	0	A	34	R	T	H	-	-	-	
61830	Washwood Heath Road, Birmingham	47	41	61/61	63	60	83	63	60	0	0	A	79	R	T	H	-	-	-	
62056	Washwood Heath Road, Birmingham	48	41	65/66	64	57	72	65	57	0	0	A	79	R	T	H	-	-	-	
62306	The Sportsman Public House, Saltley Road, Birmingham	56	49	66/66	70	62	70	70	62	0	0	A	9	R	T	H	-	-	-	
62459	Devon Street, Birmingham	48	42	65/66	70	62	70	70	62	0	0	A	5	R	T	H	-	-	-	
63581	Heartlands Parkway, Nechells	50	44	63/65	64	62	63	64	62	0	0	A	4	R	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
63617	Aston Church Road, Nechells, Birmingham	56	49	67/68	65	57	70	65	57	0	0	A	6	R	T	H	-	-	-	
64051	Little Clover Close, Birmingham	45	39	61/62	52	50	58	52	50	1	0	NA	27	R	T	-	-	-	-	
64140	Aston Church Road, Nechells, Birmingham	46	39	60/61	54	48	57	54	49	0	0	NA	18	R	T	-	-	-	-	
64317	Aston Church Road, Nechells, Birmingham	46	40	63/63	65	57	70	65	57	0	0	A	2	R	T	H	-	-	-	
64544	Mount Street, Nechells, Birmingham	47	41	60/61	64	50	63	64	51	0	0	A	40	R	T	-	-	-	-	
64548	Aston Church Road, Nechells	44	38	60/61	54	48	57	54	49	0	0	NA	1	R	T	-	-	-	-	
64621	Mount Street, Nechells, Birmingham	42	36	58/59	60	48	58	60	49	0	0	NA	30	R	T	-	-	-	-	
65458	Hutton Road, Saltley, Birmingham	46	40	60/61	61	46	67	61	47	0	1	A	39	R	T	-	-	-	-	
65620	Mainstream Way, Nechells	51	45	67/69	63	59	66	63	59	0	0	A	1	R	T	H	-	-	-	
67190	Warren Road, Washwood Heath, Birmingham	40	35	58/59	60	49	56	60	49	0	0	NA	53	R	T	-	-	-	-	
67370	Common Lane, Washwood Heath, Birmingham	34	28	52/53	49	44	51	49	44	0	0	NA	11	R	T	-	-	-	-	
67381	Coronation Road, Washwood Heath, Birmingham	34	29	50/52	49	44	51	49	44	0	0	NA	32	R	T	-	-	-	-	
67399	Pounds Green, Washwood Heath, Birmingham	35	29	52/53	49	44	51	49	44	0	0	NA	26	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
67514	Washwood Heath Road, Birmingham	37	32	54/55	62	56	66	62	56	0	0	NA	59	R	T	H	-	-	-	
68349	Bennetts Road, Birmingham	37	32	53/54	57	51	67	57	52	0	0	NA	62	R	T	-	-	-	-	
68797	Warren Road, Washwood Heath, Birmingham	46	41	63/64	52	47	56	53	48	1	1	A	40	R	T	-	-	-	-	
69064	Aston Church Road, Saltley, Birmingham	49	43	65/67	62	57	69	62	57	0	0	A	29	R	T	H	-	-	-	
69256	Warren Road, Washwood Heath, Birmingham	44	39	63/65	52	47	56	53	48	1	1	NA	31	R	T	-	-	-	-	
69289	Warren Road, Washwood Heath, Birmingham	50	44	68/69	52	47	56	53	48	1	1	A	23	R	T	-	-	-	-	
69374	Washwood Heath Road, Birmingham	44	38	61/62	62	56	66	62	56	0	0	NA	18	R	T	H	-	-	-	
69609	Washwood Heath Road, Birmingham	45	39	62/63	70	64	83	70	64	0	0	NA	74	R	T	H	-	-	-	
69846	Warren Road, Washwood Heath	41	36	58/59	52	47	56	53	47	0	0	NA	23	R	T	-	-	-	-	
72891	Drews Lane, Birmingham	33	27	48/50	70	61	82	70	61	0	0	NA	21	R	T	H	-	-	-	
72929	Drews Lane, Birmingham	34	28	50/51	70	61	82	70	61	0	0	NA	16	R	T	H	-	-	-	
74077	Northleigh Road, Birmingham	29	23	49/51	53	49	56	53	49	0	0	NA	120	R	T	-	-	-	-	
74286	Drews Lane, Birmingham	29	23	46/47	66	58	66	66	58	0	0	NA	45	R	T	H	-	-	-	
74502	Drews Lane, Birmingham	31	25	52/53	66	58	75	66	58	0	0	NA	29	R	T	H	-	-	-	
75140	Drews Lane, Birmingham	30	24	48/49	52	47	57	52	47	0	0	NA	20	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
75527	Drews Lane, Birmingham	33	27	50/51	52	47	57	52	47	0	0	NA	2	R	T	-	-	-	-	
75599	Drews Lane, Birmingham	32	27	50/51	52	47	57	52	47	0	0	NA	18	R	T	-	-	-	-	
75669	Drews Lane, Birmingham	34	28	49/50	52	47	57	52	47	0	0	NA	12	R	T	-	-	-	-	
75715	Drews Lane, Birmingham	34	28	48/50	52	47	57	52	47	0	0	NA	11	R	T	-	-	-	-	
75755	Drews Lane, Birmingham	33	27	48/49	67	59	77	67	59	0	0	NA	26	R	T	H	-	-	-	
75816	Drews Lane, Birmingham	32	26	47/48	67	59	77	67	59	0	0	NA	23	R	T	H	-	-	-	
75902	Drews Lane, Birmingham	33	27	48/49	70	61	82	70	61	0	0	NA	18	R	T	H	-	-	-	
75944	Ingleton Road, Birmingham	31	26	46/47	53	49	56	53	49	0	0	NA	122	R	T	-	-	-	-	
76063	Drews Lane, Birmingham	32	27	48/49	70	61	82	70	61	0	0	NA	9	R	T	H	-	-	-	
701037	Malthouse Lane, Birmingham	40	34	57/59	62	56	66	62	56	0	0	NA	74	R	T	H	-	-	-	
701038	Malthouse Lane, Birmingham	38	33	56/58	62	56	66	62	56	0	0	NA	45	R	T	H	-	-	-	
701039	Washwood Heath Road, Birmingham	38	32	54/56	70	64	83	70	64	0	0	NA	6	R	T	H	-	-	-	
701040	Washwood Heath Road, Birmingham	37	32	54/55	70	64	83	70	64	0	0	NA	80	R	T	H	-	-	-	
701041	Washwood Heath Road, Birmingham	33	28	49/50	70	64	83	70	64	0	0	NA	103	R	T	H	-	-	-	
701042	Washwood Heath Road, Birmingham	32	26	48/49	70	64	83	70	64	0	0	NA	37	R	T	H	-	-	-	
700500	Bordesley Street, Birmingham	43	36	57/57	57	52	64	55	52	-2	-1	NA	10	R	T	-	-	-	-	
700501	Albert Street, Birmingham	36	31	63/65	63	58	74	63	58	0	0	NA	335	R	T	H	-	-	-	
700502	Jennens Court Flats, Etna	49	42	63/65	53	49	60	52	48	-2	-1	A	1	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Street, Birmingham																			
700503	Park Street, Nechells	51	43	61/61	63	58	74	62	57	-1	-1	A	1	R	T	H	-	-	-	
700504	Lawley Middleway, Nechells	62	52	63/67	62	51	60	62	52	0	1	A	1	R	T	-	-	-	-	
700506	Fazeley Street, Birmingham	45	38	60/62	58	51	64	58	51	0	0	NA	1	R	T	-	-	-	-	
700511	Aston Church Road, Birmingham	67	57	72/73	68	57	74	68	57	0	0	A	4	R	T	H	-	-	-	
700513	Common Lane, Birmingham	40	34	57/58	49	44	51	50	44	0	0	NA	16	R	T	-	-	-	-	
700515	Drews Lane, Birmingham	33	28	49/50	70	61	82	70	61	0	0	NA	4	R	T	H	-	-	-	
700517	Drews Lane, Birmingham	32	26	47/49	70	61	82	70	61	0	0	NA	10	R	T	H	-	-	-	
700518	Northleigh Road, Birmingham	33	27	49/50	53	49	56	53	49	0	0	NA	4	R	T	-	-	-	-	
700519	Northleigh Road, Birmingham	33	27	49/50	53	49	56	53	49	0	0	NA	42	R	T	-	-	-	-	
711011	Committed Development CFA26/15	35	30	60/61	57	52	64	57	52	0	0	NA	-	CD	T	-	-	-	-	
711030	Committed Development CFA26/016	29	24	58/58	63	58	74	63	58	0	0	NA	-	CD	T	H	-	-	-	
711031	Committed Development CFA26/008	53	47	70/73	61	58	74	62	58	1	0	A	-	CD	T	H	-	-	-	
35612	Millennium Point (Performing Arts Studies)	55	50	69/71	53	49	60	55	50	2	1	B	7	G4	T	-	-	-	-	
35848	Network Park Industrial Estate (General Commercial)	53	48	72/75	67	64	66	67	64	0	0	B	2	G5	T	H	-	-	-	
36117	Adderley Primary School, (Primary School)	39	33	55/55	52	45	58	52	45	0	0	B	1	G4	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
36618	Allison Street, Birmingham, (Shopping)	30	25	57/57	69	65	76	69	65	0	0	B	2	G5	T	H	-	-	-	
36618	Digbeth, Birmingham, (General Commercial)	30	25	57/57	69	65	76	69	65	0	0	B	3	G5	T	H	-	-	-	
36618	Middle Mall, Bullring, (Retail Warehouse)	30	25	57/57	69	65	76	69	65	0	0	B	33	G5	T	H	-	-	-	
36618	Well Lane, Birmingham, (General Commercial)	30	25	57/57	69	65	76	69	65	0	0	B	1	G5	T	H	-	-	-	
37341	Landor Street, Birmingham, (Office)	48	42	64/68	67	65	58	67	65	0	0	B	1	G5	T	H	-	-	-	
37341	Duddeston Mill Road, (General Commercial)	48	42	64/68	67	65	58	67	65	0	0	B	1	G5	T	H	-	-	-	
37360	Boulton Business Units, Nechells Place (General Commercial)	53	47	71/71	64	57	70	64	57	0	0	B	7	G5	T	-	-	-	-	
37463	Clayton Road, Birmingham, (Shopping)	58	51	73/73	65	57	66	65	57	0	0	B	1	G5	T	H	-	-	-	
37463	Cranby Street, Birmingham, (Shopping)	58	51	73/73	65	57	66	65	57	0	0	B	1	G5	T	H	-	-	-	
37463	Gate Street, Birmingham, (General Commercial)	58	51	73/73	65	57	66	65	57	0	0	B	2	G5	T	H	-	-	-	
37790	Boulton Business Units, Nechells Place (General Commercial)	52	45	67/67	62	55	57	62	55	0	0	B	13	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
37790	Cato Street North (Leisure Centre)	52	45	67/67	62	55	57	62	55	0	0	B	1	G5	T	-	-	-	-	
37790	Nechells Place, Birmingham, (Shopping)	52	45	67/67	62	55	57	62	55	0	0	B	1	G5	T	-	-	-	-	
37790	St. Clements House, St. Clements Road (Factory)	52	45	67/67	62	55	57	62	55	0	0	B	1	G5	T	-	-	-	-	
37790	Vauxhall Road, Birmingham, (Fire Station)	52	45	67/67	62	55	57	62	55	0	0	B	1	G5	T	-	-	-	-	
37938	Lawford House, Lawford Close (General Commercial)	55	50	74/77	56	51	61	58	53	2	2	B	4	G4	T	-	-	-	-	
37938	Lawley Middleway, Birmingham, (Shopping)	55	50	74/77	56	51	61	58	53	2	2	B	1	G4	T	-	-	-	-	
38276	Aspect Court, Temple Row, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	7	G5	T	-	-	-	-	
38276	Bank House, Cherry Street, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	22	G5	T	-	-	-	-	
38276	Birmingham County Court, Bull Street (County Court)	29	23	44/45	55	48	76	55	48	0	0	B	7	G5	T	-	-	-	-	
38276	Birmingham Crown Court, Newton Street (Crown Court)	29	23	44/45	55	48	76	55	48	0	0	B	2	G5	T	-	-	-	-	
38276	Bull Street, Birmingham, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	20	G5	T	-	-	-	-	
38276	Cannon Street, Birmingham, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	12	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
38276	Caxton Gate, Cannon Street, (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	11	G5	T	-	-	-	-	
38276	Caxton House, Fore Street, (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	1	G5	T	-	-	-	-	
38276	Cherry Street, Birmingham, (Shopping)	29	23	44/45	55	48	76	55	48	o	o	B	1	G5	T	-	-	-	-	
38276	Coleridge Chambers, Corporation Street, Birmingham, (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	10	G5	T	-	-	-	-	
38276	Colmore Gate, Colmore Row, (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	7	G4	T	-	-	-	-	
38276	Colmore Row, Birmingham, (Offices)	29	23	44/45	55	48	76	55	48	o	o	B	1	G5	T	-	-	-	-	
38276	Colmore Square, (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	10	G3	T	-	-	-	-	
38276	Corporation Street, Birmingham (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	7	G5	T	-	-	-	-	
38276	Friends Meeting House, Bull Street, Birmingham, (Office)	29	23	44/45	55	48	76	55	48	o	o	B	1	G5	T	-	-	-	-	
38276	Great Western Arcade (General Commercial)	29	23	44/45	55	48	76	55	48	o	o	B	10	G5	T	-	-	-	-	
38276	Grenville Building, Cherry Street (Shopping)	29	23	44/45	55	48	76	55	48	o	o	B	3	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
38276	Ingleby House, Cannon Street (Local Government Office)	29	23	44/45	55	48	76	55	48	0	0	B	1	G3	T	-	-	-	-	
38276	Murdock Chambers, Corporation Street, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	1	G5	T	-	-	-	-	
38276	Ruskin Chambers, Corporation Street, Birmingham, (Office)	29	23	44/45	55	48	76	55	48	0	0	B	2	G5	T	-	-	-	-	
38276	St. Philips Place, Birmingham, (Office)	29	23	44/45	55	48	76	55	48	0	0	B	8	G5	T	-	-	-	-	
38276	St. Philips Point, Temple Row, Birmingham, (Office)	29	23	44/45	55	48	76	55	48	0	0	B	5	G5	T	-	-	-	-	
38276	Steelhouse Lane, Birmingham, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	2	G5	T	-	-	-	-	
38276	Steelhouse Lane, Birmingham, (Police Services)	29	23	44/45	55	48	76	55	48	0	0	B	1	G5	T	-	-	-	-	
38276	Temple Court, Bull Street, Birmingham, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	8	G3	T	-	-	-	-	
38276	Temple Row, Birmingham, (Shopping)	29	23	44/45	55	48	76	55	48	0	0	B	12	G5	T	-	-	-	-	
38276	The Priory Queensway, Birmingham, (General Commercial)	29	23	44/45	55	48	76	55	48	0	0	B	8	G5	T	-	-	-	-	
38276	Union Chambers, Temple Row, Birmingham, (General	29	23	44/45	55	48	76	55	48	0	0	B	6	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Commercial)																			
38276	Victoria Law Courts, Corporation Street, (Magistrates Court)	29	23	44/45	55	48	76	55	48	o	o	B	6	G5	T	-	-	-	-	
38276	West Midlands Coroners Court, Newton Street, (Coroners Court)	29	23	44/45	55	48	76	55	48	o	o	B	3	G5	T	-	-	-	-	
38592	Freightliner Terminal, Landor Street (General Commercial)	45	39	63/65	62	59	60	62	59	o	o	B	1	G5	T	-	-	-	-	
40462	Allison Street, Birmingham, (General Commercial)	36	30	53/53	60	57	74	60	57	o	o	B	2	G5	T	-	-	-	-	
40462	Digbeth Police Station, Digbeth (Police Services)	36	30	53/53	60	57	74	60	57	o	o	B	1	G5	T	-	-	-	-	
40462	Digbeth, Birmingham, (General Commercial)	36	30	53/53	60	57	74	60	57	o	o	B	2	G4	T	-	-	-	-	
40462	Meriden Street, (General Commercial)	36	30	53/53	60	57	74	60	57	o	o	B	2	G5	T	-	-	-	-	
40462	Silk House, Digbeth, (General Commercial)	36	30	53/53	60	57	74	60	57	o	o	B	2	G4	T	-	-	-	-	
40791	Digbeth, Birmingham, (Hall)	37	30	53/53	60	54	74	60	54	o	o	B	1	G3	T	-	-	-	-	
40791	Digbeth, Birmingham, (Shopping)	37	30	53/53	60	54	74	60	54	o	o	B	1	G5	T	-	-	-	-	
40791	Bordesley Street, (General Commercial)	37	30	53/53	60	54	74	60	54	o	o	B	6	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
40791	Coventry Street, (General Commercial)	37	30	53/53	60	54	74	60	54	0	0	B	4	G5	T	-	-	-	-	
40791	Floodgate Street (General Commercial)	37	30	53/53	60	54	74	60	54	0	0	B	1	G5	T	-	-	-	-	
40791	Little Ann Street, Birmingham, (Shopping)	37	30	53/53	60	54	74	60	54	0	0	B	1	G5	T	-	-	-	-	
40791	Milk Street, Birmingham, (General Commercial)	37	30	53/53	60	54	74	60	54	0	0	B	3	G5	T	-	-	-	-	
40791	Oxford Court, Oxford Street, Birmingham, (General Commercial)	37	30	53/53	60	54	74	60	54	0	0	B	1	G5	T	-	-	-	-	
40791	Oxford Street, Birmingham, (Office)	37	30	53/53	60	54	74	60	54	0	0	B	3	G5	T	-	-	-	-	
40791	Trent Street, Birmingham, (Hire Shop)	37	30	53/53	60	54	74	60	54	0	0	B	1	G5	T	-	-	-	-	
40917	Bordesley Street, Birmingham, (General Commercial)	39	33	56/56	57	52	64	57	52	0	0	B	3	G5	T	-	-	-	-	
40917	Ladbroke House Birmingham, (Local Government Office)	39	33	56/56	57	52	64	57	52	0	0	B	1	G5	T	-	-	-	-	
41264	Barn Street, Birmingham, (General Commercial)	47	41	64/67	72	63	64	72	63	0	0	B	3	G5	T	H	-	-	-	
41264	Bordesley Street, Birmingham, (General Commercial)	47	41	64/67	72	63	64	72	63	0	0	B	1	G5	T	H	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
41264	Bordesley Street, Birmingham, (General Commercial)	47	41	64/67	72	63	64	72	63	0	0	B	1	G5	T	H	-	-	-	
41264	Pickford Street, Birmingham, (Office)	47	41	64/67	72	63	64	72	63	0	0	B	2	G5	T	H	-	-	-	
41354	Benacre Drive, Fazeley Street, Birmingham, (General Commercial)	48	44	62/63	57	52	64	58	53	1	1	B	3	G5	T	-	-	-	-	
41354	Bordesley Street, Birmingham, (General Commercial)	48	44	62/63	57	52	64	58	53	1	1	B	2	G4	T	-	-	-	-	
41354	Bordesley Street, Birmingham, (Office)	48	44	62/63	57	52	64	58	53	1	1	B	1	G5	T	-	-	-	-	
41354	New Bartholomew Street, Birmingham, (Dogs Home)	48	44	62/63	57	52	64	58	53	1	1	B	1	G5	T	-	-	-	-	
41354	New Bartholomew Street, Birmingham, (General Commercial)	48	44	62/63	57	52	64	58	53	1	1	B	2	G5	T	-	-	-	-	
41588	Andover Street, Birmingham, (General Commercial)	46	40	65/65	74	68	77	74	68	0	0	B	6	G5	T	H	-	-	-	
41588	Fazeley Street, Birmingham, (General Commercial)	46	40	65/65	74	68	77	74	68	0	0	B	1	G5	T	H	-	-	-	
41588	Fazeley Street, Birmingham, (Printing Works)	46	40	65/65	74	68	77	74	68	0	0	B	1	G5	T	H	-	-	-	
41993	Park Street, Birmingham, (Shopping)	43	36	59/60	63	61	77	60	60	-3	-1	B	8	G5	T	H	-	-	-	

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ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
42018	Moat Lane, Birmingham, (General Commercial)	28	22	54/55	69	65	76	69	65	0	0	B	5	G5	T	H	-	-	-	
42018	Digbeth, Birmingham, (General Commercial)	28	22	54/55	69	65	76	69	65	0	0	B	82	G5	T	H	-	-	-	
42018	Bradford Street, Birmingham, (General Commercial)	28	22	54/55	69	65	76	69	65	0	0	B	2	G5	T	H	-	-	-	
42018	St. Martins Market, Edgbaston Street, Birmingham, (General Commercial)	28	22	54/55	69	65	76	69	65	0	0	B	1	G5	T	H	-	-	-	
42018	National Express House, Digbeth, Birmingham, (Office)	28	22	54/55	69	65	76	69	65	0	0	B	1	G5	T	H	-	-	-	
42018	Indoor Market, Edgbaston Street, Birmingham, (General Commercial)	28	22	54/55	69	65	76	69	65	0	0	B	1	G5	T	H	-	-	-	
42018	Edgbaston Street, Birmingham, (Shopping)	28	22	54/55	69	65	76	69	65	0	0	B	11	G5	T	H	-	-	-	
42114	New Street, Birmingham, (General Commercial)	21	15	59/60	59	52	76	59	52	0	0	B	40	G5	T	-	-	-	-	
42114	King Edward House, New Street, Birmingham, (General Commercial)	21	15	59/60	59	52	76	59	52	0	0	B	4	G5	T	-	-	-	-	
42114	Odeon Cinema, New Street, Birmingham, (Cinema)	21	15	59/60	59	52	76	59	52	0	0	B	1	G3	T	-	-	-	-	
42114	St. Martins Square, Birmingham, (Café)	21	15	59/60	59	52	76	59	52	0	0	B	1	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
42114	Upper Mall West, Bullring, Birmingham, (General Commercial)	21	15	59/60	59	52	76	59	52	0	0	B	65	G5	T	-	-	-	-	
42114	Stephenson Place, Birmingham, (General Commercial)	21	15	59/60	59	52	76	59	52	0	0	B	45	G5	T	-	-	-	-	
42114	Queens Drive, Birmingham, (General Commercial)	21	15	59/60	59	52	76	59	52	0	0	B	5	G5	T	-	-	-	-	
42269	Albert Street, Birmingham, (General Commercial)	19	12	48/53	63	58	74	63	58	0	0	B	1	G5	T	-	-	-	-	
42269	St. Michaels Catholic Church, Birmingham, (Church)	19	12	48/53	63	58	74	63	58	0	0	B	2	G3	T	-	-	-	-	
42269	Carrs Lane Church Centre, Carrs Lane, Birmingham, (General Commercial)	19	12	48/53	63	58	74	63	58	0	0	B	1	G5	T	-	-	-	-	
42269	Gateway House, High Street, Birmingham, (Office)	19	12	48/53	63	58	74	63	58	0	0	B	1	G5	T	-	-	-	-	
42269	High Street, Birmingham, (Building Society)	19	12	48/53	63	58	74	63	58	0	0	B	6	G5	T	-	-	-	-	
42269	Kings Parade, Dale End, Birmingham, (General Commercial)	19	12	48/53	63	58	74	63	58	0	0	B	39	G5	T	-	-	-	-	
42326	Corporation Street, Birmingham, (Shopping)	35	28	43/43	68	60	74	68	60	0	0	B	7	G5	T	H	-	-	-	
42326	The Priory Queensway,	35	28	43/43	68	60	74	68	60	0	0	B	8	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham, (Retail Warehouse)																			
42326	Bull Street, Birmingham, (Shopping)	35	28	43/43	68	60	74	68	60	0	0	B	1	G5	T	H	-	-	-	
42326	Dale End, Birmingham, (General Commercial)	35	28	43/43	68	60	74	68	60	0	0	B	1	G5	T	H	-	-	-	
42359	Corporation Street, Birmingham, (Shopping)	25	20	56/57	67	59	74	67	59	0	0	B	5	G5	T	H	-	-	-	
42359	Martineau Place, Birmingham, (General Commercial)	25	20	56/57	67	59	74	67	59	0	0	B	3	G5	T	H	-	-	-	
42359	Bull Street, Birmingham, (Shopping)	25	20	56/57	67	59	74	67	59	0	0	B	6	G5	T	H	-	-	-	
42359	New Street, Birmingham, (Shopping)	25	20	56/57	67	59	74	67	59	0	0	B	1	G5	T	H	-	-	-	
42359	Union Street, Birmingham, (Shopping)	25	20	56/57	67	59	74	67	59	0	0	B	22	G5	T	H	-	-	-	
44620	Holt Court South, Jennens Road, Birmingham, (General Commercial)	50	43	61/61	61	53	71	61	53	0	0	B	5	G5	T	-	-	-	-	
44620	Holt Court North, Heneage Street West, Birmingham, (Research)	50	43	61/61	61	53	71	61	53	0	0	B	3	G5	T	-	-	-	-	
44620	Ashted Lock Way, Birmingham, (General Commercial)	50	43	61/61	61	53	71	61	53	0	0	B	2	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
44620	Holt Court South, Jennens Road, Birmingham, (General Commercial)	50	43	61/61	61	53	71	61	53	0	0	B	10	G5	T	-	-	-	-	
45208	Aston University, Dalton Tower, Aston Street, Birmingham, (University)	30	25	54/54	66	58	75	66	58	0	0	B	3	G4	T	H	-	-	-	
45208	Aston University, Coleshill Street, Birmingham, (University)	30	25	54/54	66	58	75	66	58	0	0	B	1	G4	T	H	-	-	-	
45252	Learning & Skills Council, Bartholomew Row, Birmingham, (Education)	40	35	64/65	53	49	60	53	49	0	0	B	1	G4	T	-	-	-	-	
45327	Curzon Street, Birmingham, (Performing Arts Studies)	57	50	71/73	61	59	74	60	59	-2	0	B	1	G4	T	-	-	-	-	
46410	Gazette Buildings, Corporation Street, Birmingham, (General Commercial)	34	28	60/60	64	56	74	64	56	0	0	B	1	G5	T	-	-	-	-	
46410	Ryder Street, Birmingham, (General Commercial)	34	28	60/60	64	56	74	64	56	0	0	B	7	G5	T	-	-	-	-	
46410	Central Methodist Church, Corporation Street, Birmingham, (Church)	34	28	60/60	64	56	74	64	56	0	0	B	2	G3	T	-	-	-	-	
46410	Crown Hotel, Corporation Street, Birmingham, (Hotel)	34	28	60/60	64	56	74	64	56	0	0	B	1	G4	T	-	-	-	-	
46410	The McLaren Building, The	34	28	60/60	64	56	74	64	56	0	0	B	9	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Priory Queensway, Birmingham, (Financial And Professional Services)																			
46410	Corporation Street, Birmingham, (General Commercial)	34	28	60/60	64	56	74	64	56	0	0	B	20	G5	T	-	-	-	-	
46410	The Priory Queensway, Birmingham, (Shopping)	34	28	60/60	64	56	74	64	56	0	0	B	2	G5	T	-	-	-	-	
47091	Garrison Street, Birmingham, (General Commercial)	49	42	55/55	58	52	60	58	52	0	0	B	1	G5	T	-	-	-	-	
47091	The Garrison Centre, Garrison Lane, Birmingham, (General Commercial)	49	42	55/55	58	52	60	58	52	0	0	B	1	G5	T	-	-	-	-	
47091	Garrison Lane, Birmingham, (General Commercial)	49	42	55/55	58	52	60	58	52	0	0	B	8	G5	T	-	-	-	-	
48460	The Arch, Floodgate Street, Birmingham, (General Commercial)	39	33	56/56	68	60	74	68	60	0	0	B	1	G5	T	H	-	-	-	
48460	Barn Street, Birmingham, (Restaurant)	39	33	56/56	68	60	74	68	60	0	0	B	1	G5	T	H	-	-	-	
48460	Floodgate Street, Birmingham, (General Commercial)	39	33	56/56	68	60	74	68	60	0	0	B	3	G5	T	H	-	-	-	
48460	Heath Mill Lane, Birmingham, (Office)	39	33	56/56	68	60	74	68	60	0	0	B	1	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
48460	The Arch, Floodgate Street, Birmingham, (Office)	39	33	56/56	68	60	74	68	60	0	0	B	3	G5	T	H	-	-	-	
48460	River Street, Birmingham, (General Commercial)	39	33	56/56	68	60	74	68	60	0	0	B	11	G5	T	H	-	-	-	
48773	Fazeley Industrial Estate, Fazeley Street, Birmingham, (General Commercial)	52	46	67/70	66	60	64	66	60	0	0	B	3	G5	T	H	-	-	-	
48773	Fazeley Industrial Estate, Fazeley Street, Birmingham, (General Commercial)	52	46	67/70	66	60	64	66	60	0	0	B	2	G5	T	H	-	-	-	
48773	Minerva Works, Fazeley Street, Birmingham, (General Commercial)	52	46	67/70	66	60	64	66	60	0	0	B	15	G5	T	H	-	-	-	
48796	Great Barr Street, Birmingham, (General Commercial)	44	38	61/62	58	51	64	58	51	0	0	B	11	G5	T	-	-	-	-	
48796	Great Barr Street, Birmingham, (General Commercial)	44	38	61/62	58	51	64	58	51	0	0	B	1	G5	T	-	-	-	-	
48796	Great Barr Street, Birmingham, (General Commercial)	44	38	61/62	58	51	64	58	51	0	0	B	3	G5	T	-	-	-	-	
48817	Watery Lane Middleway, Bordesley, (Shopping)	72	63	58/59	73	65	60	73	65	0	0	B	1	G5	T	H	-	-	-	
48817	Little Barr Street,	72	63	58/59	73	65	60	73	65	0	0	B	1	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham, (General Commercial)																			
48817	Watery Lane Middleway, Bordesley, (General Commercial)	72	63	58/59	73	65	60	73	65	0	0	B	1	G5	T	H	-	-	-	
48817	Lower Dartmouth Street, Birmingham, (Factory)	72	63	58/59	73	65	60	73	65	0	0	B	3	G5	T	H	-	-	-	
49490	Vauxhall Trading Estate, Dollman Street, Birmingham, (Shopping)	47	42	62/65	69	61	58	69	61	0	0	B	7	G5	T	H	-	-	-	
49870	Heartlands Academy, Great Francis Street, Birmingham, (Higher Education)	40	35	55/58	59	54	75	59	54	0	0	B	1	G4	T	-	-	-	-	
49958	Great Francis Street, Birmingham, (Office)	43	37	58/60	59	54	75	59	54	0	0	B	1	G5	T	-	-	-	-	
49958	Great Francis Street, Birmingham, (Office)	43	37	58/60	59	54	75	59	54	0	0	B	1	G5	T	-	-	-	-	
50110	Dollman Street, Birmingham, (General Commercial)	47	41	66/69	58	52	75	58	52	0	0	B	2	G5	T	-	-	-	-	
50110	Dollman Street, Birmingham, (General Commercial)	47	41	66/69	58	52	75	58	52	0	0	B	6	G5	T	-	-	-	-	
50110	Dollman Street, Birmingham, (Office)	47	41	66/69	58	52	75	58	52	0	0	B	3	G5	T	-	-	-	-	
50238	Devon Street, Birmingham, (General Commercial)	47	41	63/65	67	60	58	67	60	0	0	B	8	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
50238	Cato Street, Birmingham, (Engineering Works)	47	41	63/65	67	60	58	67	60	0	0	B	1	G5	T	H	-	-	-	
50284	Dollman Street, Birmingham, (General Commercial)	49	43	64/67	58	52	58	58	53	0	1	B	1	G5	T	-	-	-	-	
50284	Dollman Street, Birmingham, (General Commercial)	49	43	64/67	58	52	58	58	53	0	1	B	3	G5	T	-	-	-	-	
50284	Inkerman Street, Birmingham, (General Commercial)	49	43	64/67	58	52	58	58	53	0	1	B	1	G5	T	-	-	-	-	
50326	Rea Industrial Estate, Inkerman Street, Birmingham, (General Commercial)	51	46	68/71	59	56	58	60	56	1	0	B	1	G5	T	-	-	-	-	
50326	Rea Industrial Estate, Inkerman Street, Birmingham, (General Commercial)	51	46	68/71	59	56	58	60	56	1	0	B	3	G5	T	-	-	-	-	
50326	Jubilee House, Alma Crescent, Birmingham, (General Commercial)	51	46	68/71	59	56	58	60	56	1	0	B	3	G5	T	-	-	-	-	
50586	Great Brook Street, Birmingham, (General Commercial)	56	54	60/64	55	53	66	56	54	1	1	B	1	G5	T	-	-	-	-	
50586	Great Brook Street, (General Commercial)	56	54	60/64	55	53	66	56	54	1	1	B	1	G5	T	-	-	-	-	
50586	Lawley Middleway, (General Commercial)	56	54	60/64	55	53	66	56	54	1	1	B	1	G5	T	-	-	-	-	
50586	Windsor Street South,	56	54	60/64	55	53	66	56	54	1	1	B	2	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham, (Office)																			
50821	Great Brook Street, Birmingham, (Undertakers)	46	40	57/62	57	51	60	57	51	0	0	B	1	G5	T	-	-	-	-	
50998	Revesby Walk, Birmingham, (General Commercial)	45	39	57/62	56	51	62	56	51	0	0	B	6	G5	T	-	-	-	-	
51047	Concierge Office, Duddeston Manor Road (General Commercial)	40	34	54/55	58	52	67	58	52	0	0	B	1	G5	T	-	-	-	-	
51535	Garland Street, Birmingham, (General Commercial)	42	36	57/57	58	52	60	58	52	0	0	B	1	G5	T	-	-	-	-	
51535	Garrison Street, Birmingham, (Shopping)	42	36	57/57	58	52	60	58	52	0	0	B	4	G5	T	-	-	-	-	
51605	Clock Tower, Langdon Street (General Commercial)	58	52	60/61	58	52	60	58	52	0	0	B	1	G5	T	-	-	-	-	
51605	Express House, Garrison Street (General Commercial)	58	52	60/61	58	52	60	58	52	0	0	B	1	G5	T	-	-	-	-	
51730	Landor Street, Birmingham, (Hire Shop)	45	40	62/64	55	51	60	55	51	0	0	B	1	G5	T	-	-	-	-	
51868	St. Vincent De Paul Rc School, Vauxhall Grove, (Secondary School)	47	42	63/64	56	51	61	56	51	0	0	B	1	G4	T	-	-	-	-	
51904	Inkerman Street, Birmingham, (General Commercial)	45	40	68/70	58	54	75	59	54	0	0	B	1	G5	T	-	-	-	-	
51904	Erskine Street (General	45	40	68/70	58	54	75	59	54	0	0	B	1	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Commercial)																			
51904	Inkerman Street, (General Commercial)	45	40	68/70	58	54	75	59	54	0	0	B	1	G5	T	-	-	-	-	
52180	Lawley Middleway, (General Commercial)	63	53	68/71	62	51	60	63	53	1	2	B	1	G5	T	-	-	-	-	
52342	Vauxhall Gardens, Barrack Street (Welfare Services)	48	42	59/60	57	51	60	57	51	0	0	B	1	G5	T	-	-	-	-	
52502	Lawley Middleway, Birmingham, (Car Dealer)	59	51	64/66	77	72	67	77	72	0	0	B	2	G5	T	H	-	-	-	
52502	Montague Street, Bordesley, (General Commercial)	59	51	64/66	77	72	67	77	72	0	0	B	1	G5	T	H	-	-	-	
52502	Montague Street, Bordesley, (Local Government Office)	59	51	64/66	77	72	67	77	72	0	0	B	1	G5	T	H	-	-	-	
53526	Bloomsbury Library, Nechells Parkway, (Library)	40	34	59/59	69	61	70	69	61	0	0	B	1	G4	T	H	-	-	-	
53526	Nechells Green Police Station, Fowler Street, (Police Services)	40	34	59/59	69	61	70	69	61	0	0	B	1	G4	T	H	-	-	-	
53526	Nechells Parkway, Birmingham, (General Commercial)	40	34	59/59	69	61	70	69	61	0	0	B	1	G5	T	H	-	-	-	
53805	Nechells Green Community Centre, Melvina Road, Birmingham, (Community Centre)	42	37	59/60	72	64	70	72	64	0	0	B	1	G3	T	H	-	-	-	

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ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
53805	Nechells Green Community Centre, Melvina Road, (Community Centre)	42	37	59/60	72	64	70	72	64	0	0	B	1	G3	T	H	-	-	-	
54867	Alum Rock Road, (General Commercial)	43	37	60/61	54	48	59	54	48	0	0	B	6	G3	T	-	-	-	-	
57122	Duddeston Mill Trad Estate, Duddeston Mill Road, Saltley, (General Commercial)	52	46	69/71	63	59	79	63	59	0	0	B	1	G5	T	-	-	-	-	
57122	Duddeston Mill Trad Estate, Duddeston Mill Road, Saltley, (General Commercial)	52	46	69/71	63	59	79	63	59	0	0	B	1	G5	T	-	-	-	-	
57122	Duddeston Mill Trad Estate, Duddeston Mill Road, Saltley, (General Commercial)	52	46	69/71	63	59	79	63	59	0	0	B	1	G5	T	-	-	-	-	
57122	Duddeston Mill Trad Estate, Duddeston Mill Road, Saltley, (General Commercial)	52	46	69/71	63	59	79	63	59	0	0	B	1	G5	T	-	-	-	-	
57122	Duddeston Mill Trad Estate, Duddeston Mill Road, Saltley, (Factory)	52	46	69/71	63	59	79	63	59	0	0	B	1	G5	T	-	-	-	-	
57184	Landor Street, Birmingham, (Office)	47	41	63/66	60	58	58	60	58	0	0	B	1	G5	T	-	-	-	-	
57184	Saltley Industrial Centre, Adderley Road, Birmingham, (General Commercial)	47	41	63/66	60	58	58	60	58	0	0	B	4	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
57184	Duddeston Mill Trad Estate, Duddeston Mill Road, Saltley, (General Commercial)	47	41	63/66	60	58	58	60	58	0	0	B	3	G5	T	-	-	-	-	
57184	Saltley Industrial Centre, Adderley Road, Birmingham, (Shopping)	47	41	63/66	60	58	58	60	58	0	0	B	1	G5	T	-	-	-	-	
57184	Landor Street, Birmingham, (General Commercial)	47	41	63/66	60	58	58	60	58	0	0	B	2	G5	T	-	-	-	-	
57220	Adderley Trading Estate, Adderley Road, Birmingham, (General Commercial)	45	39	62/64	57	51	58	57	51	0	0	B	12	G5	T	-	-	-	-	
57220	Cornwall Industrial Estate, Adderley Road, Birmingham, (General Commercial)	45	39	62/64	57	51	58	57	51	0	0	B	1	G5	T	-	-	-	-	
57289	Adderley Road, Saltley, (Shopping)	45	40	62/64	71	66	79	71	66	0	0	B	1	G5	T	H	-	-	-	
57289	Adderley Park Inn, Adderley Road, Birmingham, (Inn)	45	40	62/64	71	66	79	71	66	0	0	B	1	G5	T	H	-	-	-	
57381	Adderley Road, Birmingham, (Club)	47	41	64/66	58	55	66	58	55	0	0	B	1	G5	T	-	-	-	-	
57381	St. Saviours Road, Birmingham, (General Commercial)	47	41	64/66	58	55	66	58	55	0	0	B	1	G5	T	-	-	-	-	
57499	Rea Industrial Estate, Inkerman Street, Birmingham, (General	50	45	66/69	60	55	79	60	55	0	0	B	7	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Commercial)																			
58835	Cadet Hall, Washwood Heath Road, Birmingham, (Hall)	46	40	61/62	51	45	57	52	46	1	1	B	1	G3	T	-	-	-	-	
59457	Nechells Park Road, Birmingham, (General Commercial)	41	35	60/61	52	51	59	52	51	0	0	B	1	G5	T	-	-	-	-	
59457	Cattells Grove, Birmingham, (General Commercial)	41	35	60/61	52	51	59	52	51	0	0	B	1	G5	T	-	-	-	-	
59457	Nechells Methodist Church, Nechells Park Road, Birmingham, (Church)	41	35	60/61	52	51	59	52	51	0	0	B	1	G3	T	-	-	-	-	
59457	Nechells Park Road, Birmingham, (Shopping)	41	35	60/61	52	51	59	52	51	0	0	B	1	G5	T	-	-	-	-	
59457	Nechells Park Road, Birmingham, (Post Office)	41	35	60/61	52	51	59	52	51	0	0	B	1	G5	T	-	-	-	-	
59796	Mount Street Business Centre, Mount Street, Nechells, (General Commercial)	49	43	68/68	52	51	59	53	51	1	0	B	38	G5	T	-	-	-	-	
59937	St. Clements Road, Birmingham, (General Commercial)	43	37	62/63	53	50	58	53	50	0	0	B	2	G5	T	-	-	-	-	
59937	Nechells Park Road, Birmingham, (General Commercial)	43	37	62/63	53	50	58	53	50	0	0	B	1	G5	T	-	-	-	-	
59937	Nechells Park Road,	43	37	62/63	53	50	58	53	50	0	0	B	1	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham, (Shopping)																			
61166	Alum Rock Road, Birmingham, (General Commercial)	58	51	65/65	70	61	75	70	61	0	0	B	8	G5	T	H	-	-	-	
61166	Saltley Post Office, Alum Rock Road, Birmingham (Post Office)	58	51	65/65	70	61	75	70	61	0	0	B	1	G5	T	H	-	-	-	
61166	St. Saviours C Of E Primary School, Birmingham (Primary School)	58	51	65/65	70	61	75	70	61	0	0	B	1	G4	T	H	-	-	-	
62056	Washwood Heath Road, Birmingham (General Commercial)	48	41	65/66	64	57	72	65	57	0	0	B	1	G5	T	-	-	-	-	
62306	Cato Street North, Birmingham (Factory)	56	49	66/66	70	62	70	70	62	0	0	B	1	G5	T	H	-	-	-	
62306	Manton House, Saltley Road, Birmingham (General Commercial)	56	49	66/66	70	62	70	70	62	0	0	B	1	G5	T	H	-	-	-	
62306	Cato Street North, Birmingham (General Commercial)	56	49	66/66	70	62	70	70	62	0	0	B	3	G5	T	H	-	-	-	
62306	Carlton Business Centre, Nechells Place, Birmingham (General Commercial)	56	49	66/66	70	62	70	70	62	0	0	B	4	G5	T	H	-	-	-	
62306	Cato Street North, Birmingham, (Car Dealer)	56	49	66/66	70	62	70	70	62	0	0	B	1	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
62306	Saltley Road, Birmingham, (General Commercial)	56	49	66/66	70	62	70	70	62	0	0	B	2	G5	T	H	-	-	-	
62459	Devon Street, Birmingham, (General Commercial)	48	42	65/66	70	62	70	70	62	0	0	B	5	G5	T	H	-	-	-	
62459	Cato Street, Birmingham, (General Commercial)	48	42	65/66	70	62	70	70	62	0	0	B	5	G5	T	H	-	-	-	
62720	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	55	48	74/74	67	62	70	67	62	0	0	B	15	G5	T	H	-	-	-	
63581	Metro Triangle, Mount Street, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	2	G5	T	H	-	-	-	
63581	Mount Street Business Park, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Dunton Trading Estate, Mount Street, Birmingham, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	4	G5	T	H	-	-	-	
63581	Cuckoo Road, Birmingham, (Office)	50	44	63/65	64	62	63	64	62	0	0	B	2	G5	T	H	-	-	-	
63581	Dunton Trading Estate, Mount Street, Birmingham, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Mount Street Business Park,	50	44	63/65	64	62	63	64	62	0	0	B	2	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Nechells, (General Commercial)																			
63581	Mount Street Business Park, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Mount Street Business Park, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Mount Street Business Park, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Watson Road East, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Mount Street Business Park, Nechells, (Engineering Works)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Dunton Trading Estate, Mount Street, Birmingham, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	3	G5	T	H	-	-	-	
63581	Mount Street Business Park, Nechells, (General Commercial)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	
63581	Dunton Trading Estate, Mount Street, Birmingham, (Factory)	50	44	63/65	64	62	63	64	62	0	0	B	2	G5	T	H	-	-	-	
63581	Dunton Trading Estate, Mount Street, Birmingham, (Factory)	50	44	63/65	64	62	63	64	62	0	0	B	1	G5	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
64317	Mount Street Business Centre, Mount Street, Nechells, (General Commercial)	46	40	63/63	65	57	70	65	57	0	0	B	2	G5	T	H	-	-	-	
64317	Mount Street Business Centre, Mount Street, Nechells, (Shopping)	46	40	63/63	65	57	70	65	57	0	0	B	4	G5	T	H	-	-	-	
64317	Mount Street Business Centre, Mount Street, Nechells, (Shopping)	46	40	63/63	65	57	70	65	57	0	0	B	5	G5	T	H	-	-	-	
64317	Mount Street, Nechells, (Shopping)	46	40	63/63	65	57	70	65	57	0	0	B	3	G5	T	H	-	-	-	
64317	Aston Church Road, Nechells, (General Commercial)	46	40	63/63	65	57	70	65	57	0	0	B	1	G5	T	H	-	-	-	
64317	Aston Church Road, Nechells, (Shopping)	46	40	63/63	65	57	70	65	57	0	0	B	1	G5	T	H	-	-	-	
64317	Aston Church Road, Nechells, (Shopping)	46	40	63/63	65	57	70	65	57	0	0	B	1	G5	T	H	-	-	-	
64548	Aston Church Road, Nechells, (Employment Agency)	44	38	60/61	54	48	57	54	49	0	0	B	1	G5	T	-	-	-	-	
65458	Washwood Heath Road, Birmingham, (Mosque)	46	40	60/61	61	46	67	61	47	0	1	B	1	G3	T	-	-	-	-	
65458	Al Huda Girls School, Washwood Heath Road, Birmingham, (School)	46	40	60/61	61	46	67	61	47	0	1	B	1	G4	T	-	-	-	-	
65458	Gate Medical Centre,	46	40	60/61	61	46	67	61	47	0	1	B	1	G4	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Washwood Heath Road, Birmingham, (Health Centre)																			
65620	Mainstream Industrial Park, Mainstream Way, Birmingham, (General Commercial)	51	45	67/69	63	59	66	63	59	0	0	B	2	G5	T	-	-	-	-	
66331	Arden Industrial Estate, Bromford Lane, Washwood Heath, (General Commercial)	17	10	53/54	64	61	70	64	61	0	0	B	4	G5	T	H	-	-	-	
66445	Vue Cinema, Star City, Watson Road, Nechells, (Cinema)	52	47	71/72	65	61	74	65	61	0	0	B	18	G3	T	H	-	-	-	
66445	Gravelly Industrial Park, Birmingham, (General Commercial)	52	47	71/72	65	61	74	65	61	0	0	B	1	G5	T	H	-	-	-	
66559	Star Park South, Heartlands Parkway, Birmingham, (General Commercial)	54	48	72/74	65	63	74	65	63	0	0	B	1	G5	T	H	-	-	-	
67381	Washwood Heath Road, Birmingham, (Shopping)	34	29	50/52	49	44	51	49	44	0	0	B	1	G5	T	-	-	-	-	
67399	Common Lane, Washwood Heath, (Local Government Office)	35	29	52/53	49	44	51	49	44	0	0	B	1	G5	T	-	-	-	-	
69064	Washwood Heath Road, Birmingham, (General Commercial)	49	43	65/67	62	57	69	62	57	0	0	B	6	G5	T	-	-	-	-	
69256	Leigh Junior & Infant School,	44	39	63/65	52	47	56	53	48	1	1	B	1	G4	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Leigh Road, Birmingham, (Junior School)																			
69374	St. Mark's Church, Washwood, Birmingham, (Church)	44	38	61/62	62	56	66	62	56	0	0	B	1	G3	T	-	-	-	-	
69846	Gospel Hall, Leigh Road, Birmingham, (Hall)	41	36	58/59	52	47	56	53	47	0	0	B	1	G3	T	-	-	-	-	
69846	Hasant College, Leigh Road, Birmingham, (College)	41	36	58/59	52	47	56	53	47	0	0	B	1	G4	T	-	-	-	-	
71826	Gravelly Industrial Park, Birmingham, (Brewery)	45	39	62/63	70	66	74	70	66	0	0	B	1	G5	T	H	-	-	-	
72552	Gravelly Industrial Park, Birmingham, (General Commercial)	47	42	65/66	66	61	74	66	61	0	0	B	25	G5	T	H	-	-	-	
74286	Drews Lane, Birmingham, (Shopping)	29	23	46/47	66	58	66	66	58	0	0	B	1	G5	T	H	-	-	-	
75527	Bromford Lane, Washwood Heath, (Office)	33	27	50/51	52	47	57	52	47	0	0	B	1	G5	T	-	-	-	-	
75527	Drews Lane, Birmingham, (General Commercial)	33	27	50/51	52	47	57	52	47	0	0	B	2	G5	T	-	-	-	-	
75715	Drews Lane, Birmingham, (Shopping)	34	28	48/50	52	47	57	52	47	0	0	B	1	G5	T	-	-	-	-	
75902	Drews Lane, Washwood Heath (General Commercial)	33	27	48/49	70	61	82	70	61	0	0	B	1	G5	T	H	-	-	-	
700500	Solar House, Bordesley Street, Birmingham, (General	43	36	57/57	57	52	64	55	52	-2	-1	B	2	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Commercial)																			
700501	Masshouse Plaza, Birmingham, (Magistrates Court)	36	31	63/65	63	58	74	63	58	0	0	B	1	G3	T	-	-	-	-	
700505	St. James House, St. James Place (Offices)	55	48	60/60	56	51	61	58	52	2	2	B	1	G5	T	-	-	-	-	
700506	Minerva Works, Fazeley Street, Birmingham, (General Commercial)	45	38	60/62	58	51	64	58	51	0	0	B	8	G5	T	-	-	-	-	
700507	Dollman Street, Birmingham, (Local Government Office)	50	45	69/71	56	51	61	57	52	1	1	B	1	G5	T	-	-	-	-	
700508	Pennine Way, Saltley, (General Commercial)	64	57	70/70	64	57	72	64	57	0	0	B	1	G5	T	-	-	-	-	
700508	High Street, Saltley, (Probation Centre)	64	57	70/70	64	57	72	64	57	0	0	B	1	G5	T	-	-	-	-	
700509	Cato Street North, Birmingham, (General Commercial)	49	42	62/62	53	50	58	54	50	1	0	B	2	G5	T	-	-	-	-	
700510	Blueberry Hotel, Watson Road East, Nechells, (Hotel)	47	42	66/67	65	61	74	65	61	0	0	B	1	G4	T	H	-	-	-	
700511	International House, Arley Road, Saltley, (General Commercial)	67	59	72/73	68	57	74	68	59	0	2	B	2	G5	T	H	-	-	-	
700518	Bethel Free Baptist Church, Wardend Road, Birmingham, (Church)	33	27	49/50	53	49	56	53	49	0	0	B	1	G3	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
710304	Viaduct Street, Birmingham	49	44	64/64	62	59	60	62	59	0	0	A	1	G5	T	H	-	-	-	
701039	Washwood Heath Road, Birmingham, (Job Centre)	38	32	54/56	70	64	83	70	64	0	0	B	1	G5	T	H	-	-	-	
711044	Saltley Business Park, Cumbria Way, Saltley, (General Commercial)	47	42	66/67	58	52	66	58	52	0	0	B	2	G5	T	-	-	-	-	

Direct impact - Summary

4.3.7 The operational airborne noise impacts identified in Table 3 are summarised in Table 4.

Table 4: Summary of operational airborne sound impacts

Receptor	Number of impacts		
	Minor	Moderate	Major
Residential properties	0	0	0
Non-residential properties	0	0	0
Quiet areas	None	None	None

4.4 Assessment of impacts and effects

Residential receptors: direct effects - individual buildings

4.4.1 The mitigation measures including noise insulation will reduce noise inside all dwellings such that it will not reach a level where it would significantly affect residents.

Residential receptors: direct effects - communities

4.4.2 The mitigation measures in this area will avoid airborne noise adverse effects on the majority of receptors, and at the following communities:

- Washwood Heath;
- Nechells;
- Vauxhall;
- Nechells Green;
- Digbeth; and
- Central Birmingham around Curzon Street.

4.4.3 Taking account of the envisaged mitigation, Map Series SV-02 (Volume 5 Map book) shows the long term 40dB² night-time sound level contour from the operation of trains on the Proposed Scheme. The extent of the 40dB night-time sound level contour is equivalent to, or slightly larger than, the 45dB daytime contour³.

4.4.4 In general, below 40dB during the night and 50dB during the day adverse effects are not expected.

² Defined as the equivalent continuous sound level from 23:00 to 07:00 or $L_{pAeq,night}$

³ With the train flows described in the assumptions section of this CFA Report, the daytime sound level (defined as the equivalent continuous sound level from 07:00 to 23:00 or $L_{pAeq,day}$) from the Proposed Scheme would be approximately 5dB higher than the night-time sound level. The 40dB night-time contour therefore indicates the distance from the Proposed Scheme at which the daytime sound level would be 45dB. This differs from other CFA reports (where the difference is 10dB) because of the empty stock movements that occur between Curzon Street and Washwood Heath RSMD just prior to and just after the start and close of passenger services.

- 4.4.5 Above 40dB during the night and 50dB during the day the effect of noise is dependent on the baseline sound levels in that area and the change in sound level (magnitude of effect) brought about by the Proposed Scheme. The airborne noise impacts and effects forecast for the operation of the scheme are presented on Map Series SV-02 (Volume 5 Map Book).
- 4.4.6 The changes in noise levels are likely to affect the acoustic character of the area such that there is a perceived change in the quality of life and are considered to be significant when assessed on a community basis⁴ taking account of the local context. When assessed on this basis, none of the adverse effects on acoustic character in this area are considered significant.

Residential receptors: indirect effects

- 4.4.7 Changes in road traffic due to the Proposed Scheme, as set out in Section 12: Traffic and Transport, are likely to cause adverse noise effects on residential receptors along the following local roads:
- New Bartholomew Street (OSV26-Co1), where an overall increase in outdoor noise levels of around 3dB is forecast; and
 - the section of Allison Street between Bordesley Street and B4100 Digbeth (OSV26-Co2), where an overall increase in outdoor noise levels of around 4dB is forecast.
- 4.4.8 These increases in noise level resulting from the changes in road traffic are likely to adversely affect the acoustic character of the area such that there is a perceived change in the quality of life. These effects have been considered significant when assessed on a community basis taking account of the local context.
- 4.4.9 Changes in road traffic due to the Proposed Scheme, as set out in Section 12: Traffic and Transport, are likely to cause *beneficial* noise effects on residential receptors along the following local roads:
- Bordesley Street between Park Street and New Canal Street (OSV26-Co3), a reduction in road traffic noise levels of over 10 dB is forecast; and
 - Fazeley Street west of New Bartholomew Street (OSV26-Co4). Closure of this road will reduce the road traffic noise levels on this route and provide a significant beneficial effect on committed development ref. CFA26/16.
- 4.4.10 These reductions in noise level resulting from the changes in road traffic are likely to beneficially affect the acoustic character of the area such that there is a perceived improvement in the quality of life. These effects have been considered significant when assessed on a community basis taking account of the local context.

⁴ Further information is contained in Volume 1.

Non-residential receptors: direct effects

- 4.4.11 The assessment of operational noise and vibration indicates that significant direct effects on non-residential receptors are unlikely to occur in this area.

Non-residential receptors: indirect effects

- 4.4.12 Changes in road traffic due to the Proposed Scheme is likely to cause adverse noise effects on non-residential receptors along the following local roads:
- Cardigan Street, between Jennens Road and Curzon Street, increased road traffic noise levels of approximately 5 dB (further information on traffic flows is provided in Section 12: Traffic and Transport), although currently there are no receptors in close proximity to this road and it may be significantly altered by Committed Development ref. CFA26/9, CFA26/10 and CFA26/12;
 - Floodgate Street, between Fazeley Street and Little Ann Street, and Coventry Street between Allison Street and Meriden Street, increased road traffic noise levels of approximately 4-8 dB (further information on traffic flows is provided in Section 12: Traffic and Transport). This road is occupied by non-sensitive industrial buildings;
 - Masshouse Lane increased road traffic noise levels of approximately 2 dB (further information on traffic flows is provided in Section 12: Traffic and Transport). This road is lined with commercial premises which are currently subject to high road traffic levels and therefore, suitable mitigation is incorporated into the building design; and,
 - Jennens Road (between Chapel Street and Woodcock Street), Moor Street Queensway (between Masshouse Lane and Carrs Lane) and Moor Street, increased road traffic noise levels of approximately 1 dB (further information on traffic flows is provided in Section 12: Traffic and Transport).
- 4.4.13 On a reasonable worst case basis, the assessment of operational noise and vibration indicates that a significant indirect noise effect is likely to occur on non-residential receptors on Cardigan Street, between Jennens Road and Curzon Street due to increased road traffic noise levels.

Cumulative effects

- 4.4.14 Details of properties being currently developed which were afforded planning approval before the safeguarding date are presented in Volume 5: Appendix CToo4-000. Within this area, the operational sound, noise or vibration associated with these developments in conjunction with the operation of the Proposed Scheme do not result in any significant cumulative effects.